

## ABSTRACT

The present invention relates to chemical power sources, in particular to chemical batteries provided with a lithium anode, and an oxide based cathode with a non-aqueous electrolyte. In this type of battery the manganese dioxide is used in the form of an active cathodic agent. The manganese dioxide is synthesized by oxidizing a manganese nitrate by a sodium chlorate in a nitric acid associated with heating, subsequent separation of a product from a reaction medium and heat processing. The concentration of the nitric acid is modified from 38-44 % at the beginning of synthesis to 23-26 % at the end thereof. The content of the thus produced manganese dioxide is equal to 94-96 %, a bulk density thereof ranges from 2.5 to 2.9 kg/dm<sup>3</sup>, the particle size distribution ranges from 1-3 to 60-70 microns, and the electric conductivity is equal to, or greater than, 3.4 S/m. The inventive active cathode material exhibits a high discharge capacity and cycling capacity under commonly encountered operating conditions. The present invention makes possible to use said material for lithium primary and multi-charge batteries.